9. A junction structure according to claim 7, wherein the light transmitting semiconductor layer is directly covered by a layer of silicon dioxide on the side remote from the substrate.

10. A junction structure according to claim 2, wherein the layer forming the further waveguide region is patterned.

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11. A junction structure according to claim 2, wherein the waveguide regions are in the form of rib waveguides.

12. A junction structure according to claim 2, wherein the silicon nitride layer is of sub-micron thickness and is less than one tenth the thickness of the silicon layer.

13. A junction structure according to claim 1 in which the said end face of the semiconductor waveguide at the junction is curved and forms a lens to direct transmitted light into the adjacent waveguide section.

14. An optical interferometer having parallel light transmitting paths, at least one of said paths including a waveguide junction structure as claimed in claim 1.

17. An interferometer according to claim 15, wherein the or each silicon waveguide is a rib waveguide formed from a silicon-on-insulator wafer.

18. An interferometer according to claim 15, wherein the insulating layer is silicon dioxide.

22. A method according to claim 20, wherein the second dielectric layer and the silicon nitride layer are deposited such that they also extend over the top surface of the semiconductor waveguide.

23. A method according to claim 19, wherein an anti-reflective coating is deposited over the end face of the semiconductor waveguide before the second dielectric layer is deposited.